INSECTS OF MICRONESIA
Hymenoptera: Eucharidae

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Up to now five species of Eucharidae have been described from Micronesia by Fullaway (1913b),[1] Ishii (1941), Ishii and Nagasawa (1941) and Yasumatsu (1942b). Fortunately I have had the opportunity to examine a large collection of Eucharidae available from Micronesia (213 specimens), and four new and one undetermined species are described in this paper. All the species seem to be indigenous to Micronesia, and their distribution is shown in the table. It is said that Eucharidae are parasites of Formicoidea or at least associated with ants. However, no information is available concerning the biology of any Micronesian species.

Types of the new species are deposited in the United States National Museum (US), with paratypes in Bernice P. Bishop Museum (BISHOP), the Entomological Institute of Hokkaido University (SAPPORO), and Chicago Natural History Museum (CM).

All figures were drawn by Dr. S. F. Sakagami, Faculty of Science, Hokkaido University, to whom I wish to express my cordial thanks. I am much indebted to Dr. J. L. Gressitt, who kindly arranged for this study, and my best thanks are also due to Professor T. Ishii, Professor K. Yasumatsu, and Dr. S. Nagasawa for their friendly help.

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[1] Years in parentheses refer to citations in the general bibliography of this series (volume 2).

the species seem to be indigenous to Micronesia, and their distribution is

Distributional List of Micronesian Eucharidae

	Micronesian Island Groups									
			Caroline							
	N. Mariana	S. Mariana	Palau	Yap	Caroline Atolls	Truk	Ponape	Kusaie	Marshall	Other Localities
1. Schizaspidia ponapensis			×	×	×	×	×			
2. S. chamorro		×								
3. S. brevifurcata*			×							
4. Stilbula carolinensis*			×		×					
5. Losbanus nishidai			×	×						
6. L. gressitti*							×			
7. L. sp.			×							
8. Chalcura upeensis	×	×	×	×	×	×	×	×		
9. Parachalcura maculata*					×				×	

* Described as new.

Key to Micronesian Genera of Eucharidae

1. Scutellum produced into a forked process 2
   Scutellum simple without a process 3

2(1). Scutellar process long, carinately margined; antenna with second to ninth flagellar segments each with a long branch in male and with second to eighth flagellar segments about at apex produced into a strong tooth in female .... **Schizaspidia**
   Scutellar process short, not carinately margined; antenna elongate and cylindrical with flagellar segments simple in both sexes .... **Stilbula**

3(1). Antenna filiform, simple in both sexes .... **Losbanus**
   Antenna with flagellar segments clavate in female and ramose in male 4

4(1). Head wider than thorax; antenna with second to ninth flagellar segments each with a long branch in male .... **Chalcura**
   Head as wide as thorax; antenna with first to third flagellar segments each with a branch and fourth to ninth segments each with paired branches in male .... **Parachalcura**

Genus **Schizaspidia** Westwood

Schizaspidia Westwood, 1835, Zool. Soc. London, Proc. **3**:69 (type: *S. furcifera* Westwood; Bengal).

Antenna 12-segmented, with flagellar segments short in both sexes. In male first flagellar segment with a short branch, which is sometimes obsolete; second to ninth segments each with a much longer and compressed branch; tenth segment without a branch and equal in length to branch on ninth segment. In female flagellum serrate, without

branches; second to eighth segments above at apex produced into a strong tooth; ninth and tenth segments sometimes fused, not so distinctly separated as in others. Scutellum with forked process at apex long and carinately margined. Costal cell of fore wing broad. Petiole of abdomen comparatively short.

This genus seems to be confined to the Indo-Australian Region, and yet there is a certain amount of confusion in regard to its members. The following three species, including one new species, occur in Micronesia.

KEY TO MALES OF MICRONESIAN SPECIES OF SCHIZASPIDIA

1. Scutellar process as long as or longer than scutellum proper; first flagellar segment stout, distinctly shorter than scape........ 2
   Scutellar process as long as one-half of scutellum proper; first flagellar segment a little shorter than scape........**brevifurcata**
2. Scutellar process as long as scutellum proper and axillae united; mesoscutum with posterolateral angles strongly produced; scutellum constricted at base; fore wing without a fuscous marking........**chamorro**
   Scutellar process as long as scutellum proper; mesoscutum with postero-lateral angles weakly produced; fore wing with a fuscous marking just below stigmal vein........**ponapensis**

1. **Schizaspidia ponapensis** Ishii (fig. 1, *a*).

Schizaspidia ponapensis Ishii, 1941, Annot. Zool. Japon. **20**:107, fig. 1 (Ponape; type in Kyushu Univ.).—Yasumatsu, 1942, Ins. Matsumurana **16**:155, fig. 1, B (Ponape).

Schizaspidia palauensis Ishii, 1941, Annot. Zool. Japon. **20**:108, fig. 2 (Palau; type in Kyushu Univ.).—Yasumatsu, 1942, Ins. Matsumurana **16**:155 (Truk); new syn.

Male: Bluish black, with or without metallic reflections in various degrees. Antenna dark brown with two basal segments paler. Legs light brown, with coxae concolorous with thorax. Wings hyaline, with a fuscous marking just below stigmal vein.

Antenna with scape about thrice as long as broad; first flagellar segment one and one-half times as long as broad, distinctly shorter than scape, with a sharp cone-like dorsal tooth. Mesonotum and propodeum closely reticulate; median depression of axillae narrow. Petiole of abdomen about as long as hind coxa, distinctly striate longitudinally. Length 3 mm.

Female: Differs from male as follows: Antenna with flagellum serrate; first flagellar segment without a dorsal tooth; second to eighth segments each with a strong tooth at apex; ninth and tenth segments without a tooth, not so distinctly separated as in others; tenth much smaller than ninth. Length 3 mm.

DISTRIBUTION: Caroline Is.

PALAU. NGAIANGL: Two males, Dec. 1952, Gressitt. BABELTHUAP: Northeast coast, one male, Dec. 1952, Gressitt. KOROR: Eight males, Mar. 1948, Maehler, Mar. 1954, Krauss, Gressitt (Limestone Ridge), Beardsley. ULEBSEHEL (Auluptagel): 16 males and one female, Sept. 1952, Krauss; Dec. 1952, Gressitt.

YAP. RUMUNG: Northern part, five males, July-Aug. 1950, Goss.

CAROLINE ATOLLS. ULITHI: Potangeras I., four males and one female, Nov. 1947, Dybas. WOLEAI: Falalis I., 11 males and one female, Sept. 1952, Krauss, Feb. 1953, Beardsley; Saliap I., two males, Sept. 1952, Krauss; Utagal I., six males, Sept. 1952, Krauss, Feb. 1953, Beardsley; Woleai I., two males, Sept. 1952, Krauss, Feb. 1952, Beardsley. IFALUK: Ifaluk I., 18 males, Sept. 1952, Beardsley, Sept. 1953, Bates. ELATO: Six males, Sept. 1952, Krauss, Feb. 1953, Beardsley. LAMOTREK: Three males, Sept. 1952, Krauss, Feb. 1952, Beardsley. SATAWAL: Ten males, Sept. 1952, Krauss, Feb. 1952, Beardsley. NOMWIN: Fananu I., one male, Feb. 1952, Beardsley. LUKUNOR: One male, Nov. 1954, Beardsley.

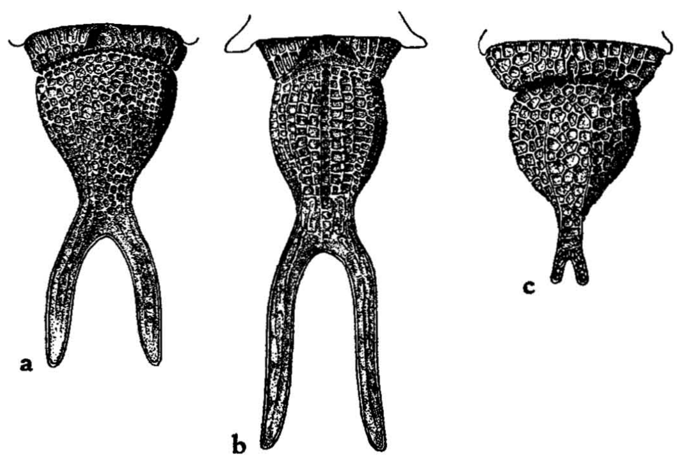


FIGURE 1.—Axillae and scutellum: a, *Schizaspidia ponapensis;* b, *S. chamorro;* c, *S. brevifurcata.*

TRUK. TON (Tol), FEFAN, TONOAS (Dublon), WENA (Moen): Nine males, 1936-1953, Ono, Maehler, Gressitt, Beardsley.

PONAPE. Four males and two females, Sept. 1950, Adams, Jan. 1953, Gressitt.

S. ponapensis and *S. palauensis* were originally described from a single male specimen respectively. Having examined the types and many other specimens, I am inclined to the opinion that these species should be treated as a single one. Because the characters (that is, the metallic green reflections, coloration of antenna, rugosity of axillae, and sculpture of scutellum and mesepisterna) by which Ishii (1941) and Yasumatsu (1942) have held the two distinct may be quite variable in individuals, they are not suitable taxonomic characters. In fact, the two forms are not always distinct, and different combinations of these characters are actually seen among the numerous examples at hand.

2. **Schizaspidia chamorro** Yasumatsu (fig. 1, *b*).

Schizaspidia chamorro Yasumatsu, 1942, Ins. Matsumurana **16**: 156, fig. 3 (Saipan; type in Kyushu Univ.).

Male: Bluish black with violaceous reflections. Abdomen, except petiole which is concolorous with thorax, brownish black. Antenna dark brown with two basal segments paler. Legs light brown, with coxae somewhat darker. Wings hyaline, without a conspicuous fuscous marking.

Antennae like those of *ponapensis* without special differences between two species. Reticulation of thorax and propodeum coarser than in *ponapensis*. Axillae strongly and broadly depressed at middle. Petiole of abdomen twice as long as hind coxa. Length 4 mm.

Female: Unknown.

DISTRIBUTION: S. Mariana Is.

S. MARIANA IS. SAIPAN: Type locality. GUAM: Two males, Ritidian Pt., June 1945, G. Bohart and Gressitt.

3. **Schizaspidia brevifurcata** Watanabe, n. sp. (figs. 1, *a*; 2).

Male: Bluish black with strong metallic-green reflections. Antenna dark brown with two basal segments paler. Legs light brown with coxae concolorous with thorax. Wings hyaline, without a fuscous marking; veins dark brown.

Head with vertex and occiput transversely striate; upper part of frons between scrobe and eye margin with weak longitudinal striae, remainder of frons almost smooth and shining. Antenna 12-segmented; scape thrice as long as broad, slightly swollen; pedicel a little broader than long; first flagellar segment a little shorter than scape, produced into a very short tooth dorsally; second to ninth segments each with a much longer and distinctly compressed branch; tenth segment without a branch and a little shorter than branch on ninth segment. Mesoscutum closely reticulate-rugose throughout, with parapsidal furrows complete and distinct, and with posterolateral angles hardly produced; axillae and scutellum reticulate as in mesoscutum; median depression of axillae shallow and median longitudinal groove obsolete; scutellar process short, as long as one-half of scutellum proper. Propodeum strongly reticulate; pleurae mostly rugose with mesepisterna partly smooth. Coxae smooth and shining. Petiole of abdomen about twice as long as hind coxa, slightly broadened toward apex, rugosely sculptured; gaster smooth and shining, as long as hind femur. Length 2.5 mm.

Female: Unknown.

Holotype, male (US 64013), Koror, Palau, Jan. 21, 1948, Dybas; paratype, male (BISHOP), Koror, Dec. 14, 1952, Gressitt.

DISTRIBUTION: Western Caroline Is. (Palau).

This species is distinct from the other Micronesian species belonging to *Schizaspidia* by the short scutellar process as well as the longer first flagellar segment.

Genus **Stilbula** Spinola

Stilbula Spinola, 1811, Mus. Nat. Hist. Natur., Ann. **17**: 150 (type: *Ichneumon cyniformis* Rossi; Europe).

Antenna 12-segmented, with flagellar segments elongate and cylindrical in both sexes; scutellum with a forked tooth-like process; costal cell very narrow; propodeum with deep spiracular grooves and with a distinct elevation laterad of each spiracle; abdominal petiole long and slender.

Holotype, male (US 64014), Koror, Palau, Oct. 10, 1954, Beardsley; paratype, male (BISHOP), Falalis I., Woleai A., Sept. 20, 1952, Krauss; paratype, male (SAPPORO), Utagal I., Woleai A., Feb. 3, 1953, Beardsley.

DISTRIBUTION: Western and central Caroline Is.

This species is immediately distinguishable from *Stilbula cyniformis tenuicornis* (Ashmead) (1904, New York Ent. Soc., Jour. **12**:151) from Japan by the close reticulations on the mesonotum and propodeum and by the absence of a fuscous marking just below the stigmal vein. It differs also from *Stilbula manipurensis* (Clausen) (1928, Ent. Soc. Washington, Proc. **30**: 85) from India by the unsculptured petiole of abdomen and by the presence of the elevations on propodeum.

Genus **Losbanus** Ishii

Losbanus Ishii, 1932, Imp. Agric. Exper. Sta. Tokyo, Bull. **3** (3): 210-211 (type: *L. uichancoi* Ishii; Philippines).

Head smooth; labial and maxillary palpi three-segmented. Antenna cylindrical, not serrate, normally 12-segmented (sometimes two or three apical segments imperfectly separated, so that they may be 11- or 10-segmented). Mesoscutum short, declivous anteriorly with parapsidal furrows completely defined; axillae broadly united medially; scutellum with a transverse fold at its apical one-third, without process. Costal cell of fore wing not especially narrow. Petiole of abdomen cylindrical, elongate, twice as long as hind coxa (not slightly longer than hind femur as stated in original description); ovipositor thick and armed with distinct saws.

This genus has been represented by the unique species *L. uichancoi* from the Philippines. In the course of the present study, however, I have come to the conclusion that *Parapsilogaster laeviceps* Gahan (1940, U.S. Nat. Mus., Proc. **88**: 429) from Ceylon and *Psilogaster nishidai* Ishii and Nagasawa from Palau Is. should be transferred to this genus. Having examined the type of *L. uichancoi,* I propose to confirm the generic definition of *Losbanus* in the preceding paragraphs. And yet taxonomic distinctions among the present genus and its allies [for example, *Parapsilogastrus* Ghesquière, 1946 (=*Parapsilogaster* Girault, 1913, *nec* Bigot, 1882) and *Psilogastrellus* Ghesquière, 1946 (=*Psilogaster* Blanchard, 1840, *nec* R.L. 1817)] have been insufficiently clarified, so that further revision of these genera is necessary.

KEY TO FEMALES OF MICRONESIAN SPECIES OF LOSBANUS

1. Antenna yellowish brown with three apical segments imperfectly separated; mesoscutum reticulate-rugose throughout; legs yellow with coxae and femora black..**nishidai**

   Antenna brown with two apical segments imperfectly separated; mesoscutum with middle lobe coarsely transversely rugose and lateral lobes almost smooth and shining; legs yellow with coxae black..**gressitti**

5. **Losbanus nishidai** (Ishii and Nagasawa), n. comb. (fig. 4).

Psilogaster nishidai Ishii and Nagasawa, 1941, Tenthredo **3** : 292, 1 pl., figs. (Palau; types in Ishii and Nagasawa collection, Japan).—Yasumatsu, 1942, Ins. Matsumurana **16** : 154.

Female: Black with slight purplish reflections; antenna brown with two basal segments yellowish; legs yellowish, with coxae and femora black.

Head almost smooth and shining; antenna 12-segmented without a true ring segment and with three apical segments imperfectly separated. Mesoscutum, axillae and scutellum coarsely reticulate-rugose, with apical margin of scutellum broadly smooth and shining. Petiole of abdomen twice as long as hind coxa, with four longitudinal carinae. Ovipositor thick, armed with distinct saws. Length 1.5 mm.

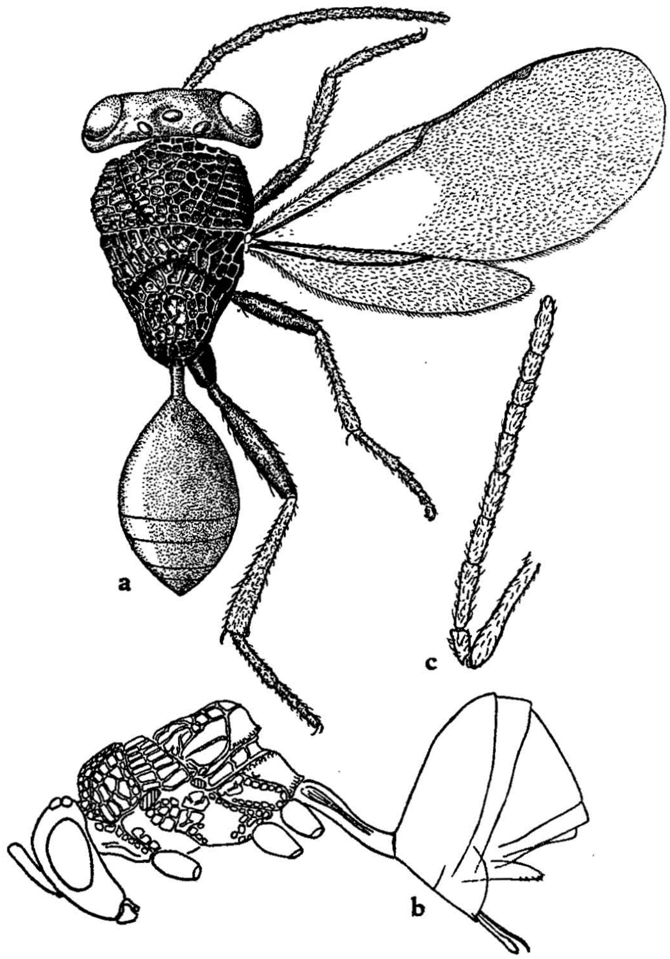


FIGURE 4.—*Losbanus nishidai,* female: **a,** dorsal view; **b,** lateral view; **c,** antenna.

8. **Chalcura upeensis** Fullaway (fig. 6).

Chalcura upeensis Fullaway, 1913, Hawaiian Ent. Soc., Proc. **2** (5): 285 (Guam: type in US).—Ishii, 1941, Annot. Zool. Japon. **20**: 106 (Ponape, Yap, Rota).—Yasumatsu, 1942, Ins. Matsumurana **16**: 154, fig. 2 (Pagan, Saipan).—Swezey, 1946, B. P. Bishop Mus., Bull. **189**: 212 (Guam).

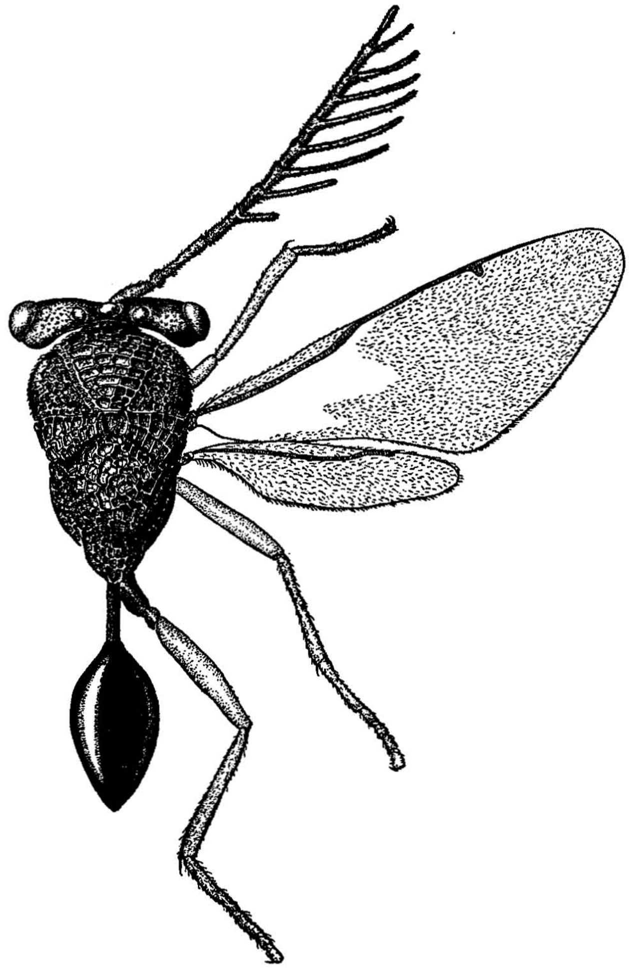


FIGURE 6.—*Chalcura upeensis,* male, dorsal view.

Male: Metallic green with purplish reflections. Abdomen except petiole dark brown. Antenna fuscous brown, with basal two segments paler. Legs light brown, with coxae concolorous with thorax. Wings hyaline; veins dark brown.

Head with upper part of frons weakly longitudinally striate. Mesonotum and propodeum coarsely reticulate. Petiole of abdomen about thrice as long as hind coxa; gaster

smooth and shining. Antenna with scape a little shorter than first flagellar segment, just reaching to anterior ocelli; pedicel as long as broad; flagellum elongate; first segment longest, five times as long as broad, without a branch; second segment a little longer than half of first, with a branch which is as long as segment itself; third to ninth segments each with a longer branch. Length 4.5 mm.

Female: Sculpture very much weaker than in male. Mesonotum and propodeum almost smooth and shining; middle lobe of mesoscutum coarsely transversely striate. Petiole of abdomen about two times as long as hind coxa. Antenna simple, without branches; fifth to seventh flagellar segments slightly produced dorsally. Length 4.5 mm.

DISTRIBUTION: S. Mariana Is., Caroline Is.

S. MARIANA IS. Guam: One male, Mt. Lamlam, Oct. 1952, Krauss.

PALAU. Ngarmalk ("NW. Auluptagel"): One male, Dec. 1952, Gressitt.

YAP. Yap: One male, July 1951, Gressitt; Kolonia, one male, Apr. 1954, Beardsley. Map: One female and three males, July-Aug. 1950, Goss.

CAROLINE ATOLLS. Pingelap: Pingelap I., one male, Jan. 1953, Gressitt.

TRUK. Three males. Ton (Tol): Mt. Unibot, Feb. 1953, Gressitt. Fefan: Mt. Iron, Jan. 1953, Gressitt.

PONAPE. Paipalap (Peipalap) Pk., Mt. Kupwuriso (Kubersoh), one male, one female, June-Sept. 1950, Adams.

KUSAIE. Three males, Mt. Matante, Feb. 1953; Funaunpes, Mar. 1953, Clarke.

MARSHALL IS. Namorik: One male, Sept. 1953; Majkon (Kaginen), two males, Oct. 1953, Beardsley.

Genus **Parachalcura** Girault

Parachalcura Girault, 1940, Rev. Soc. Ent. Argentina **10** (3): 324 (type: *P. ramosa* Girault; Australia).

This genus was originally described by Girault as a monotypical genus, with the genotype, *P. ramosa,* represented by the male alone. The original description reads as follows: "From *chalcuroides:* branches 1-4 of the funicle not alternate; funicle with paired branches after the third joint."

The following Micronesian species represented by four male and one female specimens seem to be placed in this genus, the antenna of the male agreeing fairly well with the above-mentioned original description. Furthermore, it should be noted that the flagellar segments of the female are clavate, without branches, and that the petiole of the abdomen is a little longer than the hind coxa.

9. **Parachalcura maculata** Watanabe, n. sp. (figs. 7, 8).

Male: Head, thorax and petiole of abdomen metallic green; gaster brown to dark brown; legs yellowish testaceous with coxae concolorous with thorax; antenna dark

two males, Oct. 1953. Beardsley.

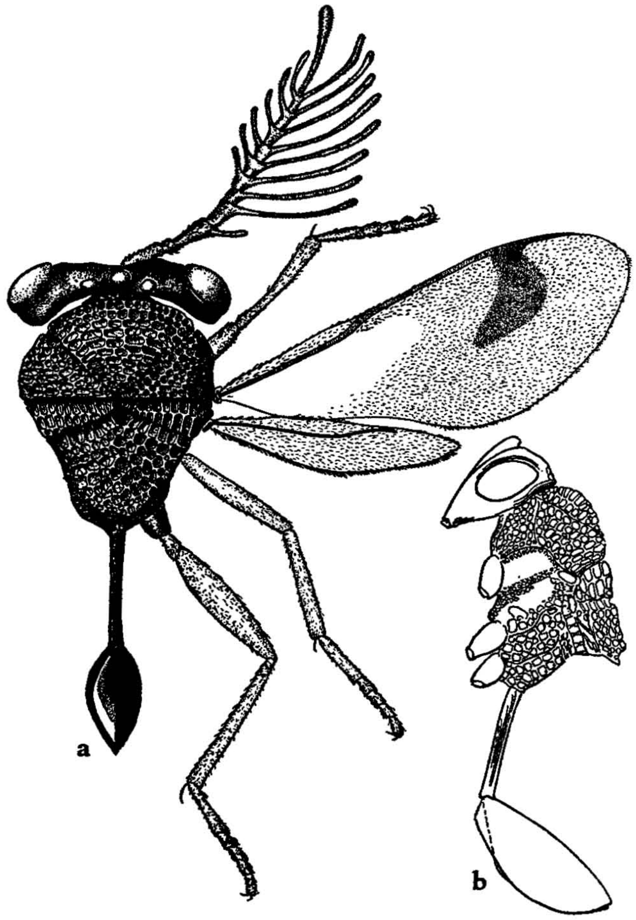


FIGURE 7.—*Parachalcura maculata,* holotype, male: **a,** dorsal view; **b,** lateral view.

brown, with basal segments somewhat paler. Mandibles and tegulae brownish yellow. Wings hyaline, with a large conspicuous cloud just below stigmal vein; veins dark brown.

Head viewed in front much broader than high and as wide as thorax; ocelli in a very low triangle; scrobes distinctly impressed, with a longitudinal median carina; occiput almost smooth and shining, upper part of frons with weak longitudinal striae and lower part and malar space with fine scattered punctures; supraclypeal area and clypeus smooth and shining; mandibles long and curved, right one with three teeth and left with two; maxillary and labial palpi three-segmented. Antenna 12-segmented; scape cylindrical, not quite reaching to anterior ocellus, about two and one-half times as long as broad; pedicel very short, about as long as broad; flagellum with branches; first segment about three times as long as broad at base, with a branch which is a little shorter than segment itself; second to ninth segments each with a much longer branch; fourth to ninth segments each with another branch on opposite side, one on fourth very short, conical, and each one on the rest elongate, but always shorter than opposite one; tenth segment without a branch and about equal in length to longer branch on ninth.

Mesoscutum strongly reticulate, with posterior face transversely striate; parapsidal furrows complete and widely separated; axillae and scutellum strongly reticulate as in mesoscutum; scutellum without a longitudinal median furrow and with a slightly elevated protuberance at dorsal apex which is not bidentate. Propodeum coarsely reticulate. Mesopleurae mostly smooth and shining, more or less reticulate along margins. Coxae nearly unsculptured. Marginal vein as long as half of submarginal vein; stigmal vein very short, stout and subtriangular; postmarginal vein as long as half of marginal.

Petiole of abdomen two and one-half times as long as hind coxa, nearly parallel-sided seen from above, slightly striate longitudinally; gaster nearly as long as thorax, longer than petiole and nearly smooth and shining. Length 4.5 mm.

Female: Antenna 12-segmented; flagellum clavate, successively decreasing in length, without branches; first segment becoming thicker toward apex, three times as long as broad at apex; second segment as long as half of first; seventh segment about as long as broad; eighth to tenth segments as long as two preceding segments united, the sutures being usually distinct but not deep. Head and thorax more weakly sculptured than in male; head almost smooth and shining; mesoscutum with median lobe coarsely striate

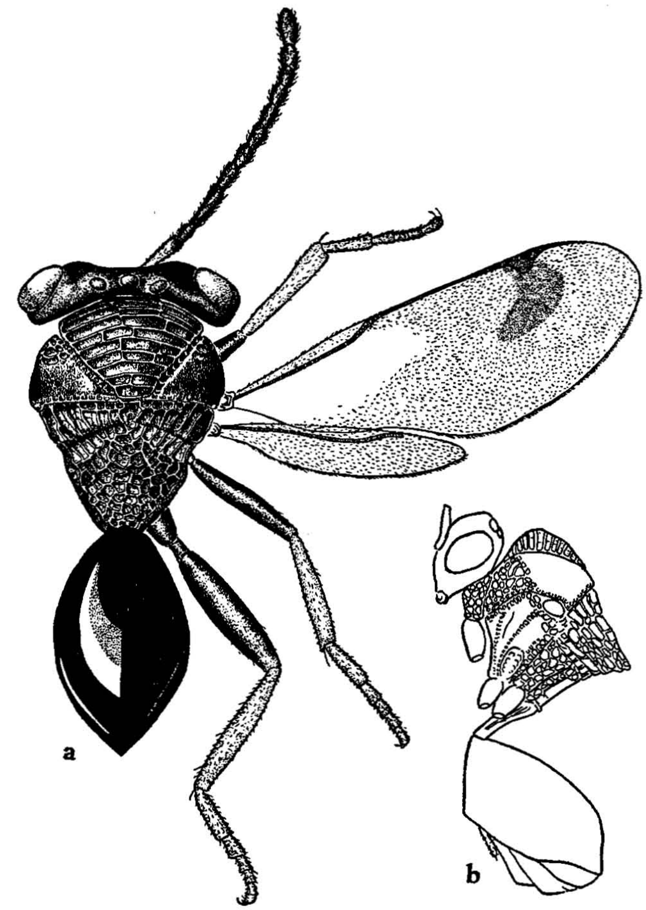


FIGURE 8.—*Parachalcura maculata,* allotype, female: **a,** dorsal view; **b,** lateral view.

transversely, and lateral lobes almost smooth and shining, with slight indication of reticulation; axillae and scutellum coarsely sculptured. Abdomen a little longer than hind coxa; gaster larger than thorax. Femora dark brown. Length 4.5 mm.

Holotype, male (US 64016) and allotopotype, female (BISHOP 2574), Wotje I., Ailinglapalap A., Marshall Is., Oct. 26, 1953, Beardsley; paratypes, two males (BISHOP, CM), Fananu I., Nomwin A., central Caroline Is., Feb. 17-18, 1954, Beardsley; paratype, one male (SAPPORO), Mokil I., Mokil A., eastern Caroline Is., July 27, 1953, Owen.

DISTRIBUTION: Marshall Is., central and eastern Caroline Atolls.

This species is immediately distinguishable from *P. ramosa* by a large fuscous marking just below the stigmal vein.